International Application No.: PCT/JP03/13767 International Filing Date: 28 October 2003

U.S. Application No. 10/533,277

Preliminary Amendment

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1. (Original) A method for determining a pig's resistance to an RNA virus, wherein the method comprises the step of detecting an 11-bp deletion in a swine Mx1 gene exon, wherein the deletion is from positions 2064 to 2074 in the nucleotide sequence of SEQ ID NO: 1.
- 2. (Original) The method according to claim 1, comprising the steps of:
 - (a) preparing a DNA sample from a subject pig;
- (b) amplifying a DNA that is a swine Mx1 gene exon and comprises the nucleotide sequence from positions 2064 to 2074 in the nucleotide sequence of SEQ ID NO: 1; and
 - (c) determining the nucleotide sequence of the amplified DNA.
- 3. (Original) The method according to claim 1, comprising the steps of:
 - (a) preparing a DNA sample from a subject pig;
 - (b) digesting the prepared DNA with a restriction enzyme;
 - (c) separating DNA fragments based on their size; and
- (d) comparing the sizes of detected DNA fragments with that of a control.

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- 4. (Original) The method according to claim 1, comprising the steps of:
 - (a) preparing a DNA sample from a subject pig;
- (b) amplifying a DNA that is a swine Mx1 gene exon and comprises the nucleotide sequence from positions 2064 to 2074 in the nucleotide sequence of SEQ ID NO: 1;
 - (c) digesting the amplified DNA with a restriction enzyme;
 - (d) separating DNA fragments based on their size; and
- (e) comparing the sizes of detected DNA fragments with that of a control.
- 5. (Original) The method according to claim 1, comprising the steps of:
 - (a) preparing a DNA sample from a subject pig;
- (b) amplifying a DNA that is a swine Mx1 gene exon and comprises the nucleotide sequence from positions 2064 to 2074 in the nucleotide sequence of SEQ ID NO: 1;
 - (c) dissociating the amplified DNA into single strands;
- (d) separating the dissociated single-stranded DNAs on a nondenaturing gel; and
- (e) comparing the gel mobility of the fractionated single-stranded DNAs with that of a control.
- 6. (Original) The method according to claim 1, comprising the steps of:
 - (a) preparing a DNA sample from a subject pig;

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- (b) amplifying a DNA that is a swine Mx1 gene exon and comprises the nucleotide sequence from positions 2064 to 2074 in the nucleotide sequence of SEQ ID NO: 1;
- (c) determining the molecular weight of the DNA amplified in step (b) by mass spectrometry; and
- (d) comparing the molecular weight determined in step (c) with that of a control.
- 7. (Original) The method according to claim 1, comprising the steps of:
 - (a) preparing a DNA sample from a subject pig;
- (b) amplifying a DNA that is a swine Mx1 gene exon and comprises the nucleotide sequence from positions 2064 to 2074 in the nucleotide sequence of SEQ ID NO: 1;
 - (c) preparing a substrate with an immobilized nucleotide probe;
- (d) contacting the DNA prepared in step (b) with the substrate prepared in step (c);
- (e) determining the intensity of hybridization between the DNA and the nucleotide probe immobilized on the substrate; and
- (f) comparing the intensity determined in step (e) with that of a control.
- 8. (Original) The method according to claim 1, comprising the steps of:
 - (a) preparing a protein sample from a subject pig; and
- (b) determining the amount of a mutant swine Mx1 protein in the protein sample, wherein said mutant swine Mx1 protein is encoded by a nucleotide

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sequence that is a swine Mx1 gene exon in which the 11-bp nucleotide sequence from positions 2064 to 2074 in SEQ ID NO: 1 has been deleted.

- 9. (Currently Amended) The method according to any one of claims 1-to-8, further comprising the step of determining that a subject pig is susceptible to an RNA virus when the 11-base deletion defined above is detected or the subject pig is resistant to the RNA virus when the deletion is not detectable.
- 10. (Currently Amended) The method according to any one of claims 1-to-9, wherein the RNA virus is an influenza virus or the causative virus of PRRS.
- 11. (Currently Amended) An oligonucleotide to be used as a PCR primer in the method according to any one of claims 1-to-10, wherein the oligonucleotide is used to amplify a DNA region that is a swine Mx1 gene exon and comprises the nucleotide sequence from positions 2064 to 2074 in the nucleotide sequence of SEQ ID NO: 1.
- 12. (Original) An oligonucleotide comprising at least 15 nucleotides, and hybridizing to a DNA region that is a swine Mx1 gene exon and comprises the nucleotide sequence from positions 2064 to 2074 in the nucleotide sequence of SEQ ID NO: 1, or a DNA region that is a swine Mx1 gene exon and comprises a nucleotide sequence in which the nucleotide sequence from positions 2064 to 2074 has been deleted.
- 13. (Original) An antibody recognizing a mutant swine Mx1 protein encoded by the nucleotide sequence of a swine Mx1 gene exon in which the nucleotide sequence from positions 2064 to 2074 in SEQ ID NO: 1 has been deleted.

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- 14. (Currently Amended) A test reagent for determining a pig's resistance to an RNA virus, wherein the reagent comprises the oligonucleotide according to claim 11-or 12, or the antibody according to claim 13.
- 15. (Original) The test reagent according to claim 14, wherein the RNA virus is an influenza virus or the causative virus of PRRS.
- 16. (New) A test reagent for determining a pig's resistance to an RNA virus, wherein the reagent comprises the oligonucleotide according to claim 12.
- 17. (New) The test reagent according to claim 16, wherein the RNA virus is an influenza virus or the causative virus of PRRS.
- 18. (New) A test reagent for determining a pig's resistance to an RNA virus, wherein the reagent comprises the antibody according to claim 13.
- 19. (New) The test reagent according to claim 18, wherein the RNA virus is an influenza virus or the causative virus of PRRS.